FIG. 1

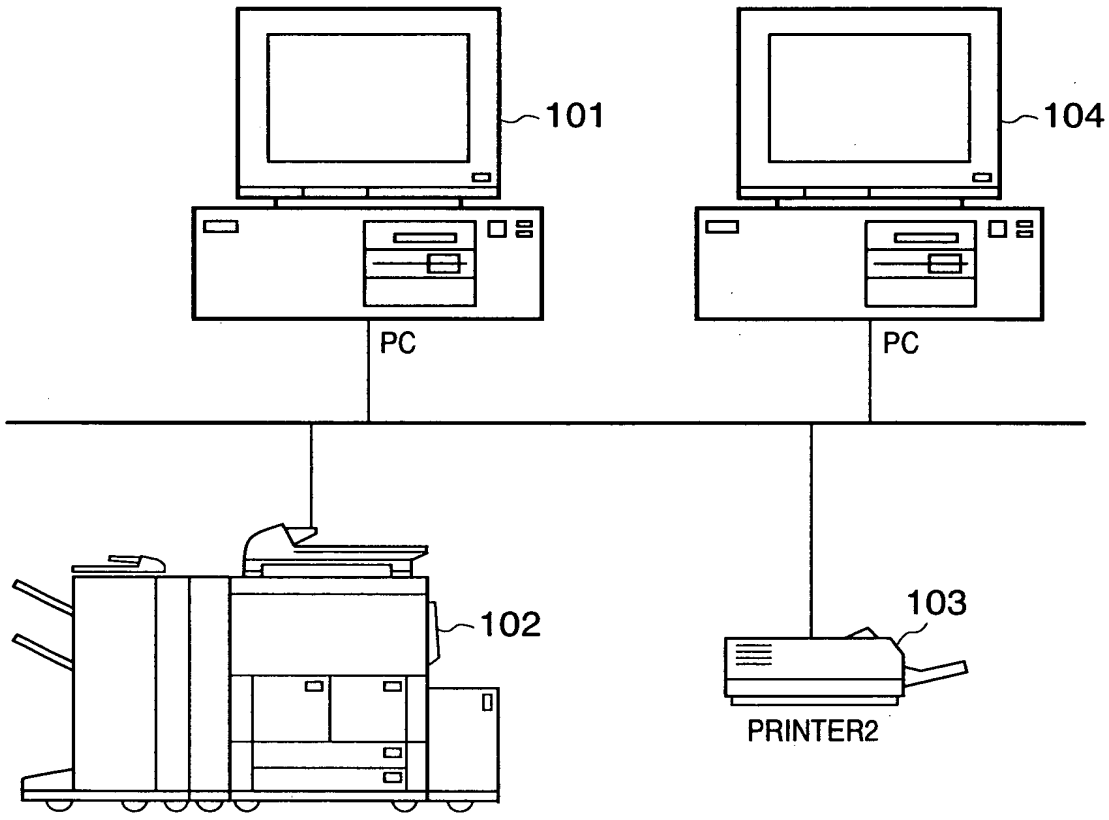

FIG. 2

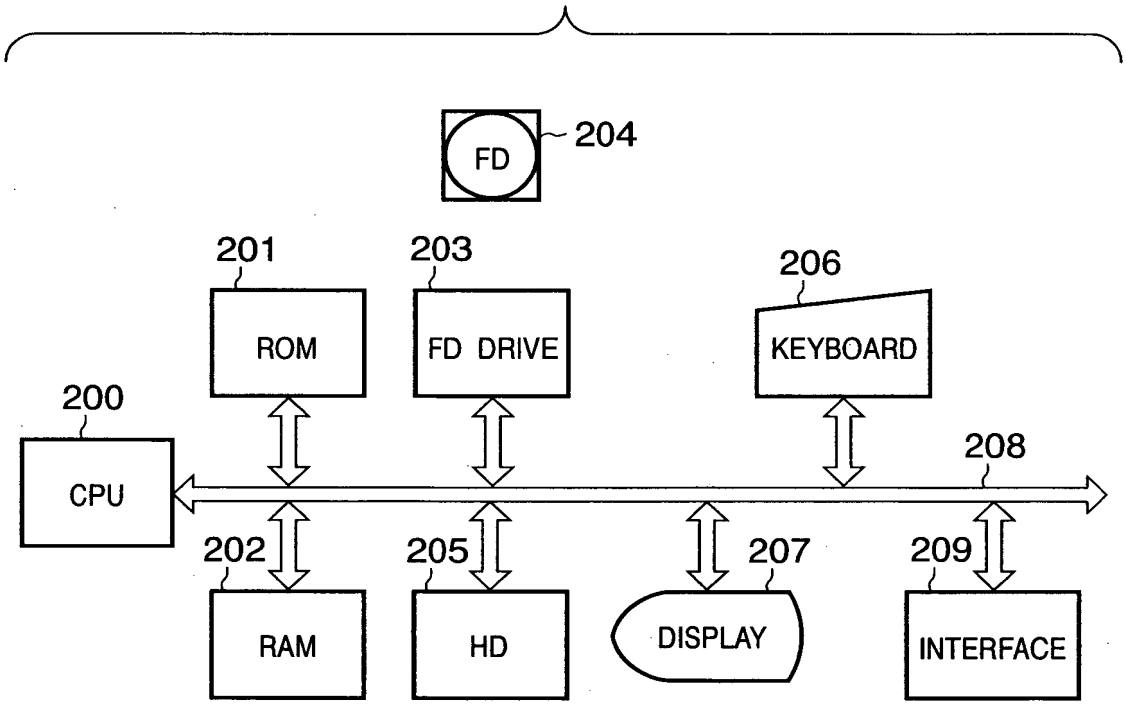
FD
204
201
ROM
203
FD DRIVE
206
KEYBOARD
200
CPU
208
202
RAM
205
HD
207
DISPLAY
209
INTERFACE

FIG. 3

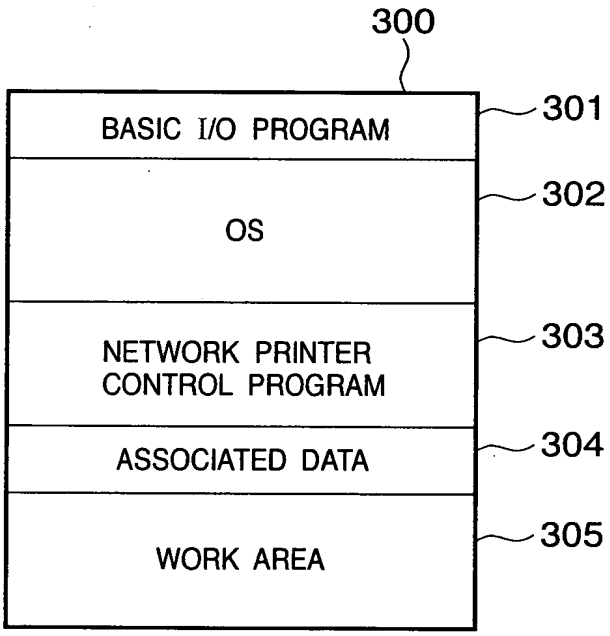
300
BASIC I/O PROGRAM
301
OS
302
NETWORK PRINTER CONTROL PROGRAM
303
ASSOCIATED DATA
304
WORK AREA
305

FIG. 4

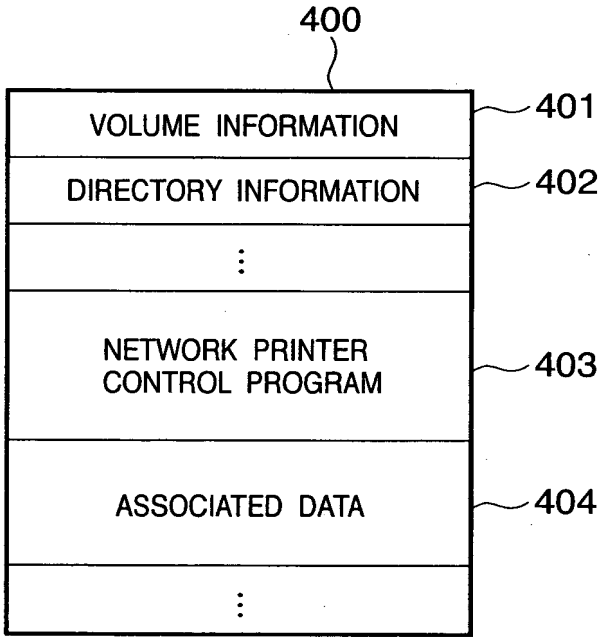
400
VOLUME INFORMATION
401
DIRECTORY INFORMATION
402
NETWORK PRINTER CONTROL PROGRAM
403
ASSOCIATED DATA
404

FIG. 5

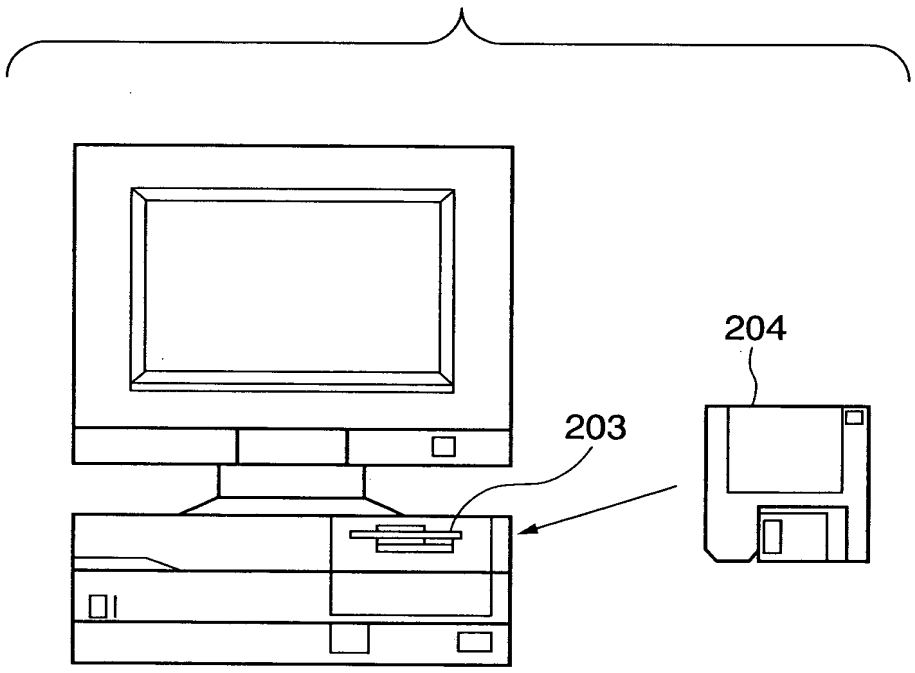

FIG. 6

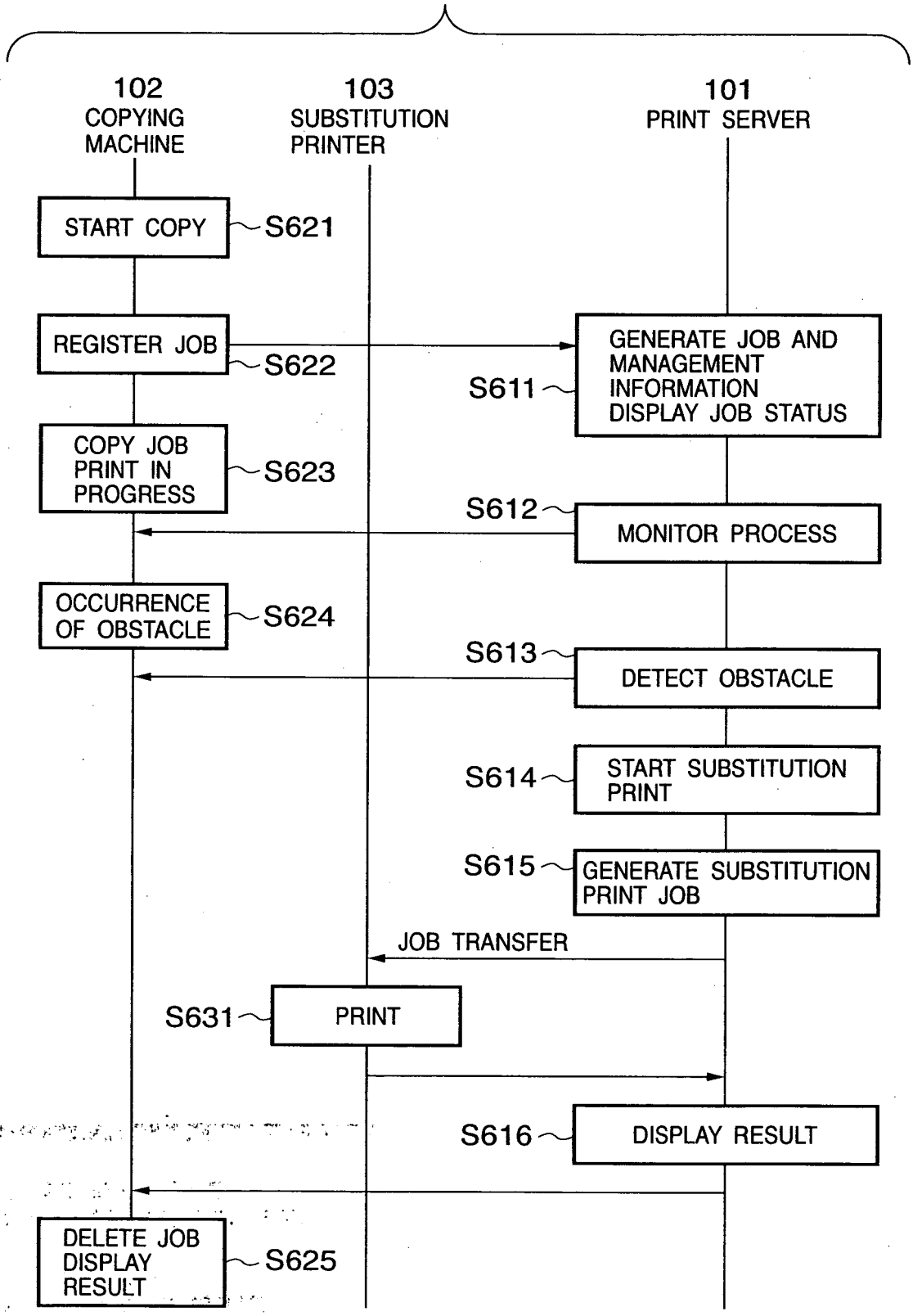
102
COPYING MACHINE
103
SUBSTITUTION PRINTER
101
PRINT SERVER
START COPY
S621
REGISTER JOB
S622
GENERATE JOB AND MANAGEMENT INFORMATION DISPLAY JOB STATUS
S611
COPY JOB PRINT IN PROGRESS
S623
S612
MONITOR PROCESS
OCCURRENCE OF OBSTACLE
S624
S613
DETECT OBSTACLE
S614
START SUBSTITUTION PRINT
S615
GENERATE SUBSTITUTION PRINT JOB
JOB TRANSFER
S631
PRINT
S616
DISPLAY RESULT
DELETE JOB DISPLAY RESULT
S625

FIG. 7

APPARATUS NAME		OBSTACLE CONTENTS	AUTOMATIC OUTPUT DESTINATION CHANGE	MANUAL OUTPUT DESTINATION CHANGE
COPY1	Copy Job	FEEDER JAM	NOT EXECUTE	NOT EXECUTE
		SORTER JAM	NOT EXECUTE	EXECUTE
		DOOR OPEN	NOT EXECUTE	NOT EXECUTE
		NO PAPER	PRINTER1	・・
		⋮	⋮	⋮
	Print Job	ALL	SUBSTITUTION PRINT SETUP OF PRINT SERVER	SUBSTITUTION PRINT SETUP OF PRINT SERVER
	⋮	⋮	⋮	⋮

FIG. 8

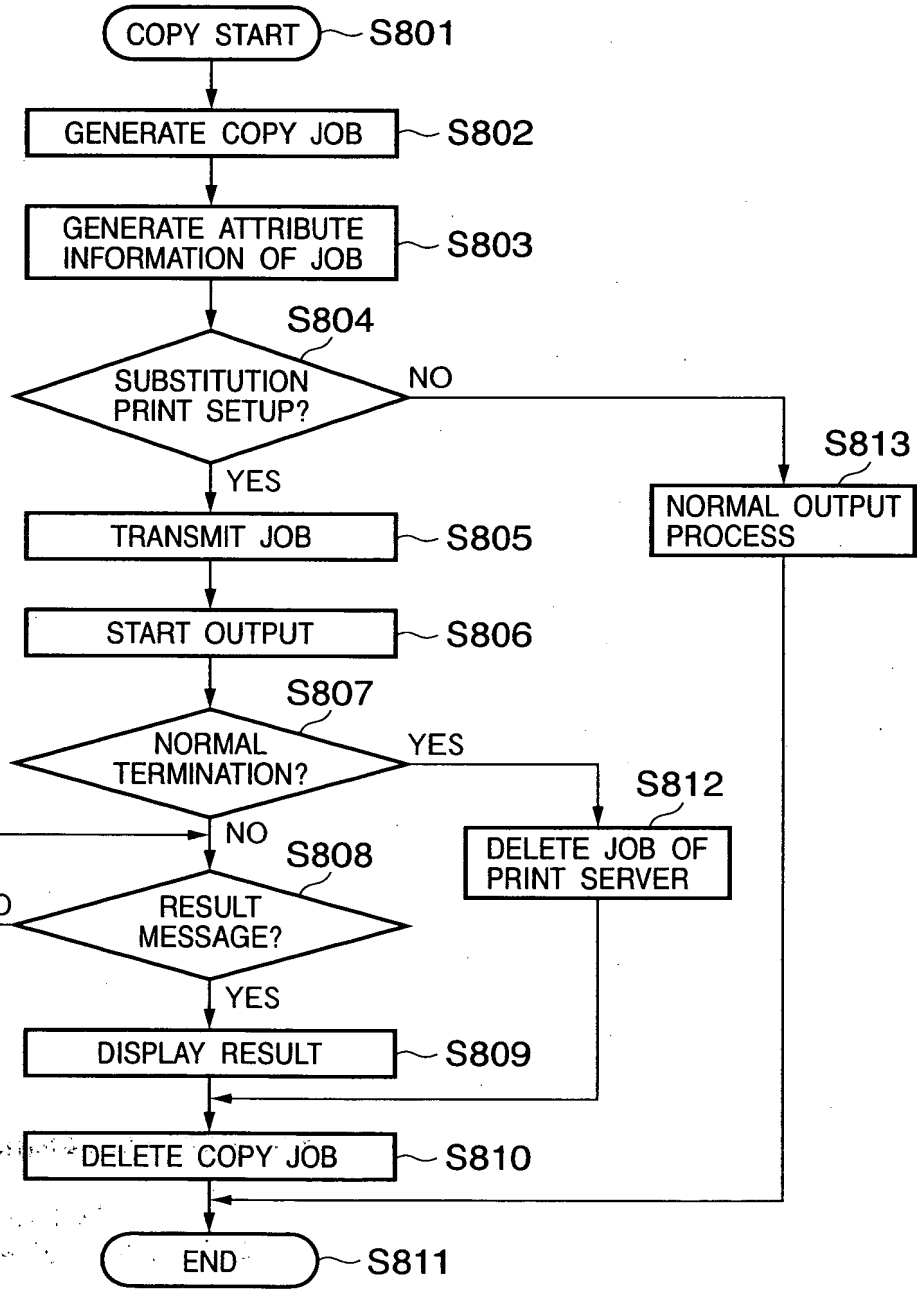
COPY START
S801
GENERATE COPY JOB
S802
GENERATE ATTRIBUTE INFORMATION OF JOB
S803
S804
SUBSTITUTION PRINT SETUP?
NO
YES
S813
NORMAL OUTPUT PROCESS
TRANSMIT JOB
S805
START OUTPUT
S806
S807
NORMAL TERMINATION?
YES
S812
DELETE JOB OF PRINT SERVER
NO
S808
NO
RESULT MESSAGE?
YES
DISPLAY RESULT
S809
DELETE COPY JOB
S810
END
S811

FIG. 9

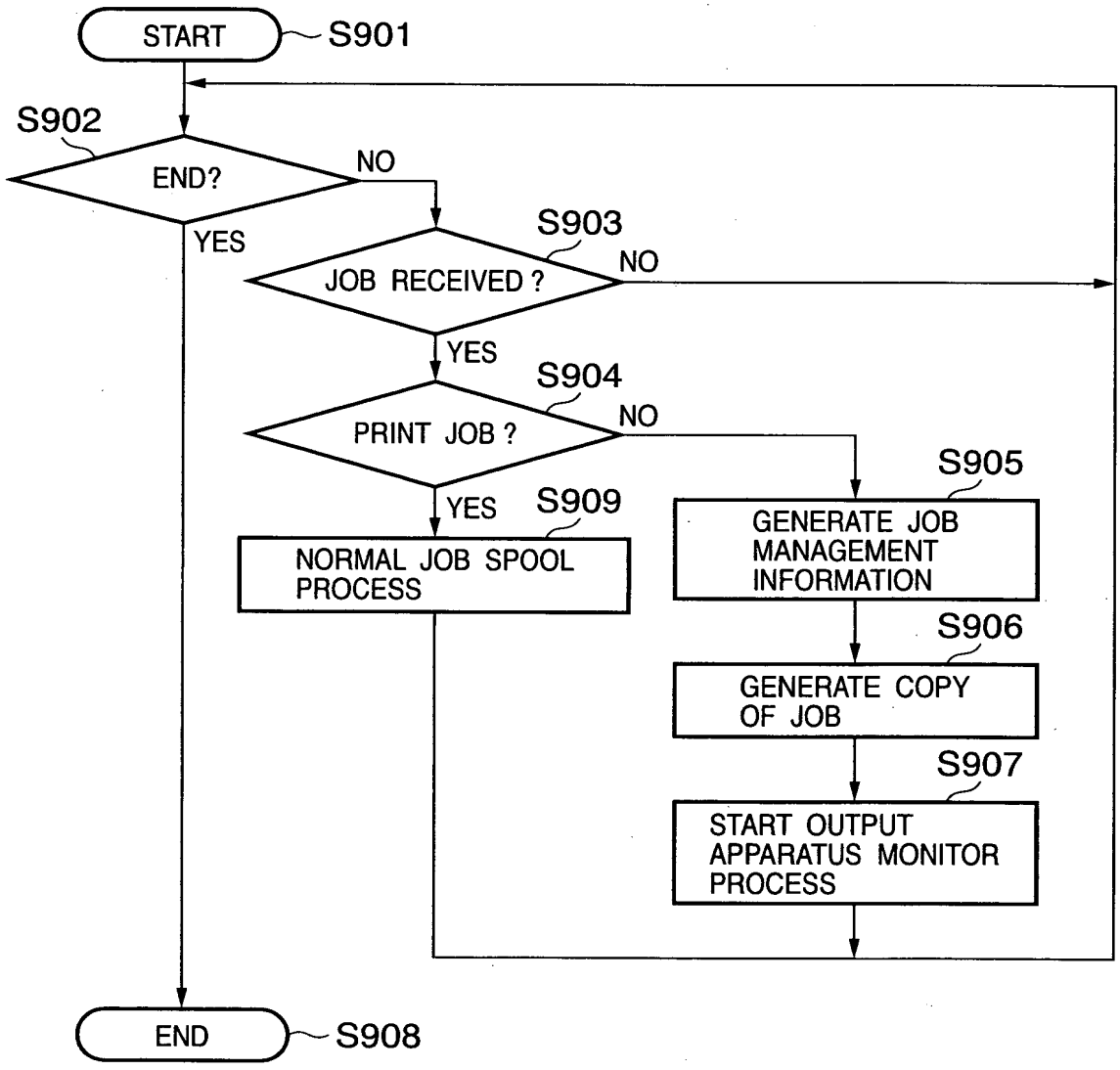
START
S901
S902
END?
NO
YES
S903
JOB RECEIVED ?
NO
YES
S904
PRINT JOB ?
NO
YES
S909
NORMAL JOB SPOOL PROCESS
S905
GENERATE JOB MANAGEMENT INFORMATION
S906
GENERATE COPY OF JOB
S907
START OUTPUT APPARATUS MONITOR PROCESS
END
S908

FIG. 10

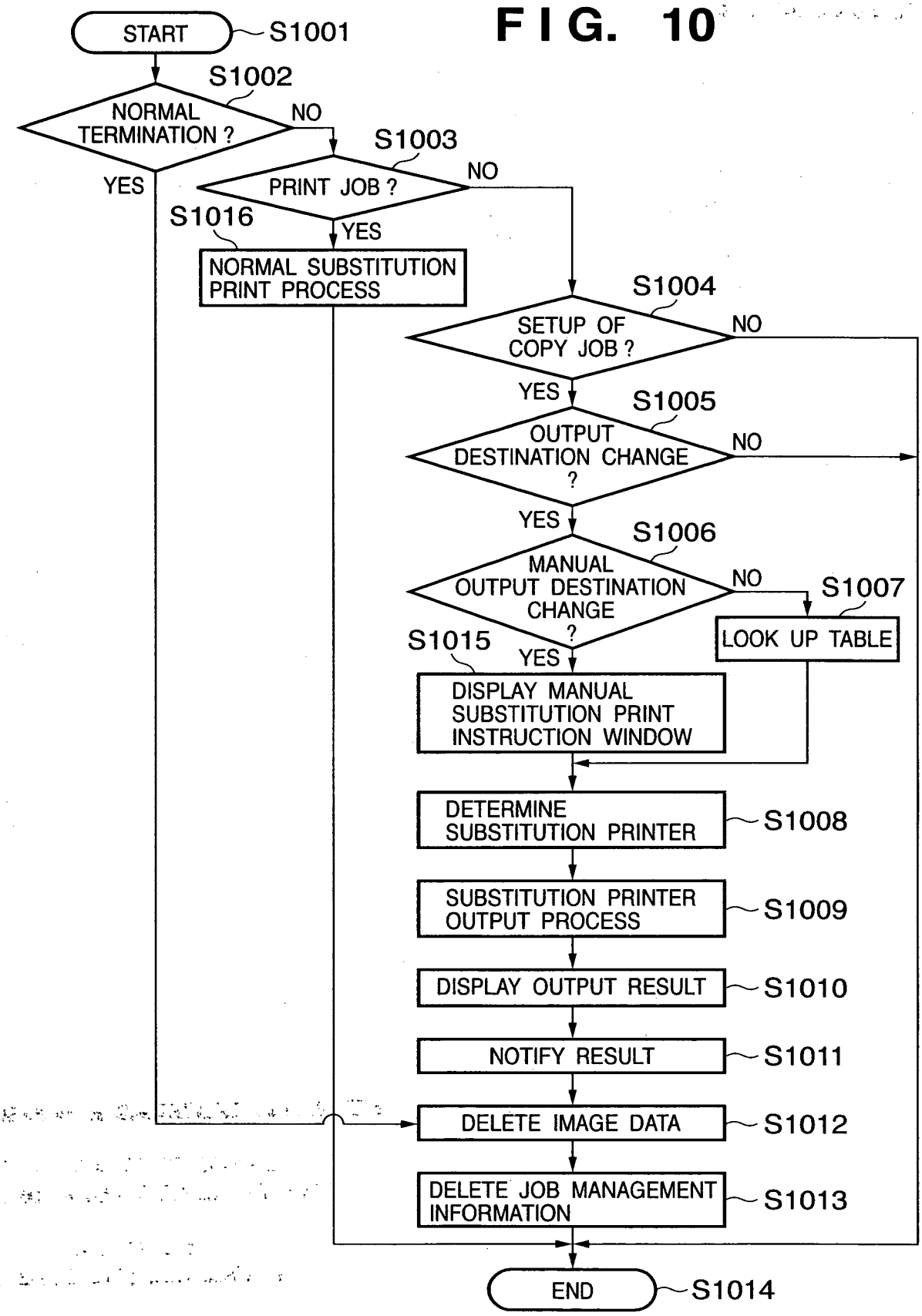
START
S1001
S1002
NORMAL TERMINATION ?
NO
YES
S1003
PRINT JOB ?
NO
YES
S1016
NORMAL SUBSTITUTION PRINT PROCESS
S1004
SETUP OF COPY JOB ?
NO
YES
S1005
OUTPUT DESTINATION CHANGE ?
NO
YES
S1006
MANUAL OUTPUT DESTINATION CHANGE ?
NO
S1007
LOOK UP TABLE
S1015
YES
DISPLAY MANUAL SUBSTITUTION PRINT INSTRUCTION WINDOW
DETERMINE SUBSTITUTION PRINTER
S1008
SUBSTITUTION PRINTER OUTPUT PROCESS
S1009
DISPLAY OUTPUT RESULT
S1010
NOTIFY RESULT
S1011
DELETE IMAGE DATA
S1012
DELETE JOB MANAGEMENT INFORMATION
S1013
END
S1014

FIG. 11

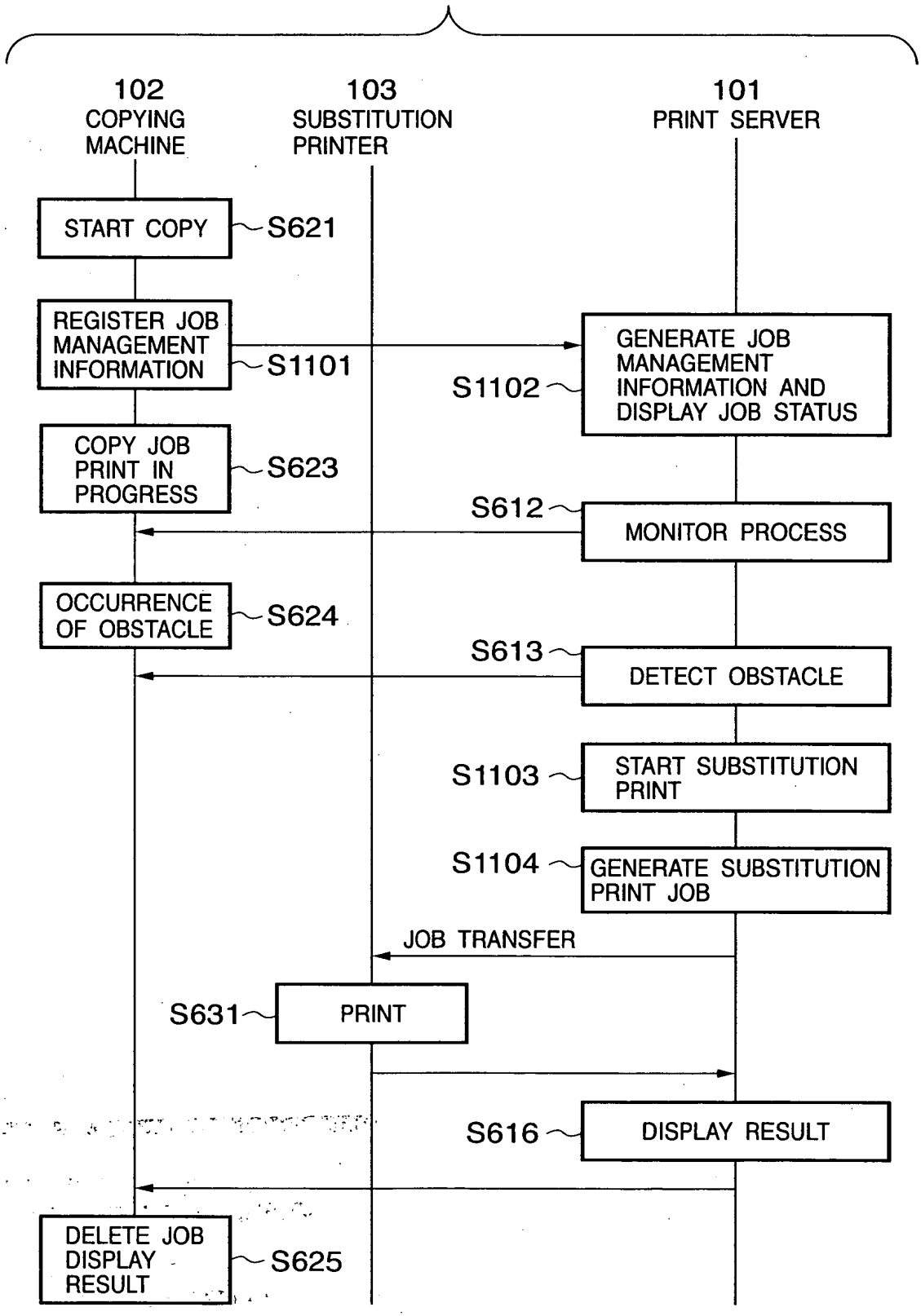
102
COPYING MACHINE
103
SUBSTITUTION PRINTER
101
PRINT SERVER
START COPY
S621
REGISTER JOB MANAGEMENT INFORMATION
S1101
GENERATE JOB MANAGEMENT INFORMATION AND DISPLAY JOB STATUS
S1102
COPY JOB PRINT IN PROGRESS
S623
S612
MONITOR PROCESS
OCCURRENCE OF OBSTACLE
S624
S613
DETECT OBSTACLE
S1103
START SUBSTITUTION PRINT
S1104
GENERATE SUBSTITUTION PRINT JOB
JOB TRANSFER
S631
PRINT
S616
DISPLAY RESULT
DELETE JOB DISPLAY RESULT
S625

FIG. 12

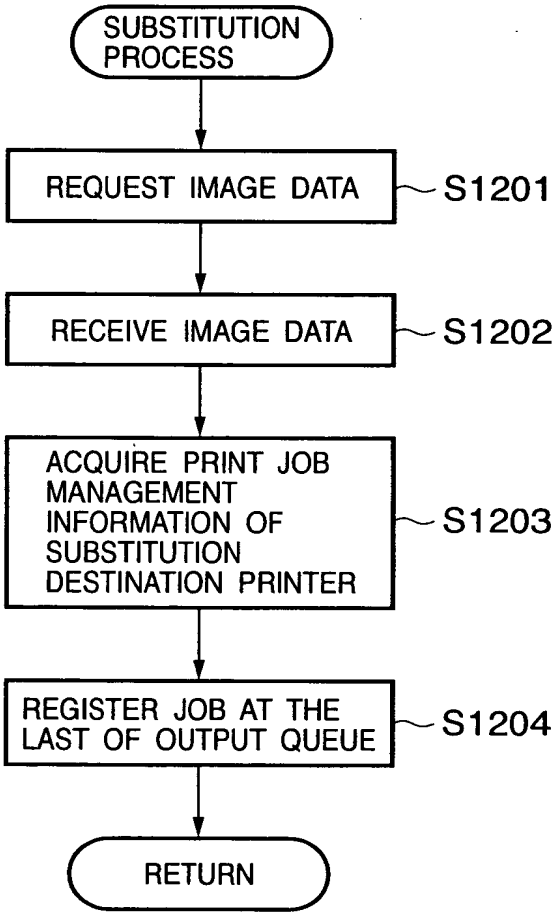
SUBSTITUTION PROCESS
REQUEST IMAGE DATA
S1201
RECEIVE IMAGE DATA
S1202
ACQUIRE PRINT JOB MANAGEMENT INFORMATION OF SUBSTITUTION DESTINATION PRINTER
S1203
REGISTER JOB AT THE LAST OF OUTPUT QUEUE
S1204
RETURN

FIG. 13A

TRANSMISSION QUEUE(OUTPUT QUEUE) 102

	STATUS	ORDER INFORMATION	TRANSMISSION QUEUE(job ID)
	•	•	•
	•	•	•
	•	•	•
	•	•	•
	•	•	•
1301	STANDBY	13 : 03	102job-p0002
1302	OUTPUT IN PROGRESS	13 : 01	102job-p0001

FIG. 13B

TRANSMISSION QUEUE(OUTPUT QUEUE) 103

	STATUS	ORDER INFORMATION	TRANSMISSION QUEUE(job ID)
	•	•	•
	•	•	•
	•	•	•
1303	SPOOL IN PROGRESS	13 : 08	103job-p0005
1304	STANDBY	13 : 07	103job-p0004
1305	STANDBY	13 : 06	103job-p0003
1306	OUTPUT IN PROGRESS	13 : 02	103job-p0002

FIG. 13C

TRANSMISSION QUEUE(OUTPUT QUEUE) 103

	STATUS	ORDER INFORMATION	TRANSMISSION QUEUE(job ID)
	•	•	•
	•	•	•
	•	•	•
1307	STANDBY	13 : 04	102job-c0001
1308	STANDBY	13 : 08	103job-p0005
1309	STANDBY	13 : 07	103job-p0004
1310	OUTPUT IN PROGRESS	13 : 06	103job-p0003

FIG. 13D

PRINT JOB MANAGEMENT INFORMATION 102

	STATUS	ORDER INFORMATION	MANAGEMENT JOB(job ID)	ATTRIBUTE
	•	•	•	•
	•	•	•	•
	•	•	•	•
1311	INPUT IN PROGRESS	13 : 10	102job-p0004	D
1312	SPOOL IN PROGRESS	13 : 09	102job-p0003	C
1313	STANDBY	13 : 03	102job-p0002	B
1314	OUTPUT IN PROGRESS	13 : 01	102job-p0001	A

FIG. 13E

PRINT JOB MANAGEMENT INFORMATION 103

	STATUS	ORDER INFORMATION	MANAGEMENT JOB(job ID)	ATTRIBUTE
	•	•	•	•
	•	•	•	•
	•	•	•	•
1315	SPOOL IN PROGRESS	13 : 08	103job-p0005	d
1316	STANDBY	13 : 07	103job-p0004	c
1317	STANDBY	13 : 06	103job-p0003	b
1318	OUTPUT IN PROGRESS	13 : 02	103job-p0002	a

FIG. 13F

TEMPORARILY REGISTERED JOB MANAGEMENT INFORMATION(Copy job)

STATUS	ORDER INFORMATION	TEMPORARY REGISTRATION (job ID)	ATTRIBUTE
•	•	•	•
•	•	•	•
•	•	•	•
OUTPUT IN PROGRESS	13 : 04	102job-c0001	E

1319

TEMPORARILY REGISTERED JOB MANAGEMENT INFORMATION(FAX job)

STATUS	ORDER INFORMATION	TEMPORARY REGISTRATION (job ID)	ATTRIBUTE
•	•	•	•
•	•	•	•
•	•	•	•
INPUT IN PROGRESS	13 : 11	102job-f0005	F

1320

FIG. 14

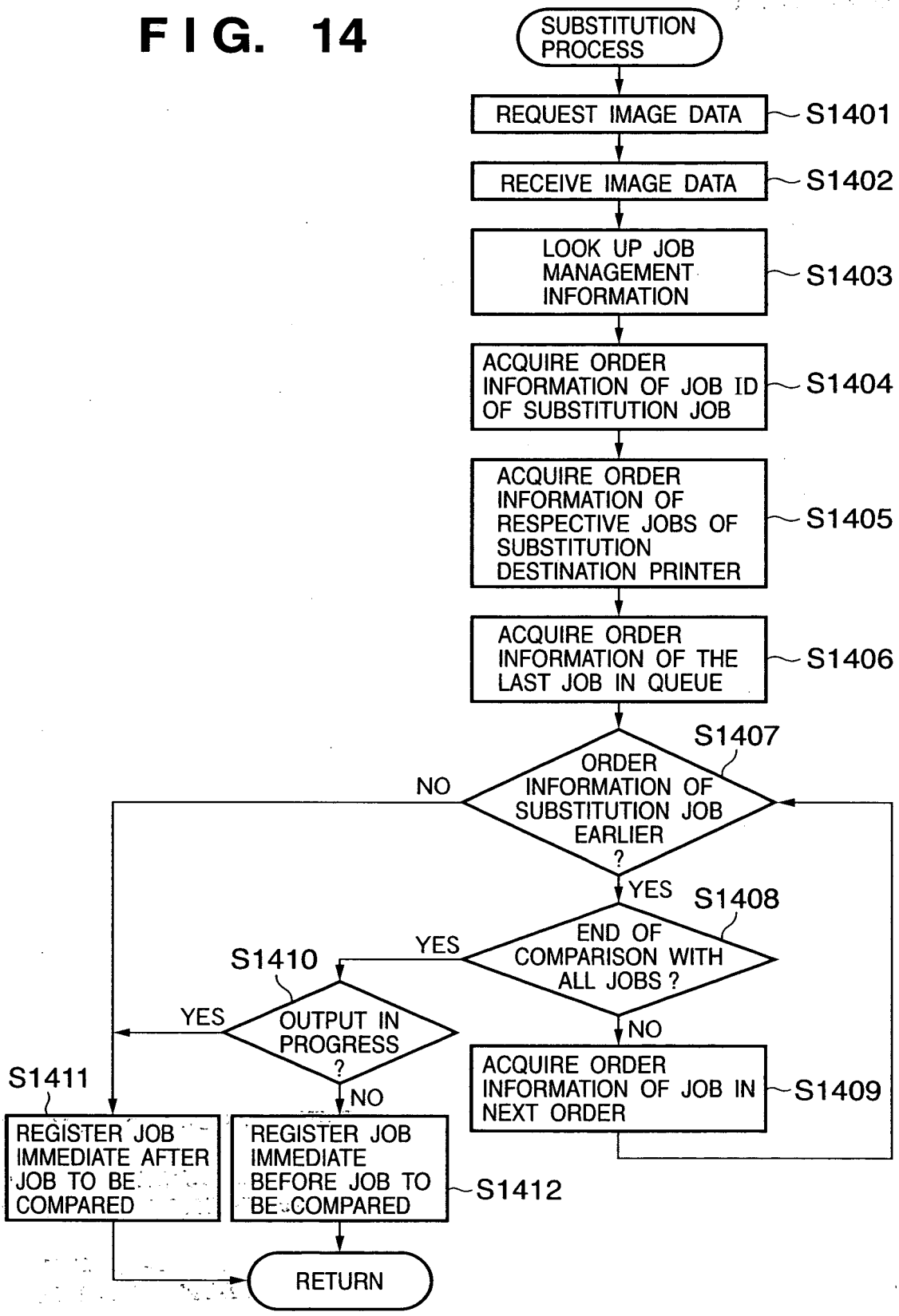
SUBSTITUTION PROCESS
REQUEST IMAGE DATA
S1401
RECEIVE IMAGE DATA
S1402
LOOK UP JOB MANAGEMENT INFORMATION
S1403
ACQUIRE ORDER INFORMATION OF JOB ID OF SUBSTITUTION JOB
S1404
ACQUIRE ORDER INFORMATION OF RESPECTIVE JOBS OF SUBSTITUTION DESTINATION PRINTER
S1405
ACQUIRE ORDER INFORMATION OF THE LAST JOB IN QUEUE
S1406
S1407
ORDER INFORMATION OF SUBSTITUTION JOB EARLIER ?
NO
YES
S1408
END OF COMPARISON WITH ALL JOBS ?
YES
S1410
OUTPUT IN PROGRESS ?
YES
NO
NO
ACQUIRE ORDER INFORMATION OF JOB IN NEXT ORDER
S1409
S1411
REGISTER JOB IMMEDIATE AFTER JOB TO BE COMPARED
REGISTER JOB IMMEDIATE BEFORE JOB TO BE COMPARED
S1412
RETURN

FIG. 15A

TRANSMISSION QUEUE(OUTPUT QUEUE) 103

	STATUS	ORDER INFORMATION	TRANSMISSION QUEUE(job ID)
	•	•	•
	•	•	•
	•	•	•
1501	SPOOL IN PROGRESS	13 : 08	103job-p0005
1502	STANDBY	13 : 07	103job-p0004
1503	STANDBY	13 : 06	103job-p0003
1504	OUTPUT IN PROGRESS	13 : 02	103job-p0002

FIG. 15B

TRANSMISSION QUEUE(OUTPUT QUEUE) 103

	STATUS	ORDER INFORMATION	TRANSMISSION QUEUE(job ID)
	•	•	•
	•	•	•
	•	•	•
1505	STANDBY	13 : 08	103job-p0005
1506	STANDBY	13 : 07	103job-p0004
1507	STANDBY	13 : 04	102job-c0001
1508	OUTPUT IN PROGRESS	13 : 06	103job-p0003

FIG. 15C

PRINT JOB MANAGEMENT INFORMATION 103

	STATUS	ORDER INFORMATION	MANAGEMENT JOB(job ID)	ATTRIBUTE
	•	•	•	•
	•	•	•	•
	•	•	•	•
1509	SPOOL IN PROGRESS	13 : 08	103job-p0005	d
1510	STANDBY	13 : 07	103job-p0004	c
1511	STANDBY	13 : 06	103job-p0003	b
1512	OUTPUT IN PROGRESS	13 : 02	103job-p0002	a

FIG. 15D

PRINT JOB MANAGEMENT INFORMATION 103

	STATUS	ORDER INFORMATION	MANAGEMENT JOB(job ID)	ATTRIBUTE
	•	•	•	•
	•	•	•	•
	•	•	•	•
1513	STANDBY	13 : 08	103job-p0005	d
	STANDBY	13 : 07	103job-p0004	c
1514	SPOOL IN PROGRESS	13 : 04	102job-c0001	E
1515				
1516	OUTPUT IN PROGRESS	13 : 06	103job-p0003	b